

So far as I can judge from the description of this genus, it appears to be very nearly allied to *Glauconome*, which is found in the rivers of Asia, and it is chiefly separated from the known species of that genus by the siphons of the animal being united to the end, while in the animal of the only species of *Glauconome* which has been observed, they are only united at the base; but the siphons of different species of several genera vary in the extent to which the siphons are united.

Mr. Benson observes, "the branchial siphon is ciliated in *Solecurtus*." Perhaps Mr. Benson intends by "cilia" tentacles or beards; for I am not aware that any of the conchiferous Mollusca have the siphons destitute of cilia. But the question is, what does Mr. Benson mean by *Solecurtus*? as that name has been given to a number of different animals. *Novaculina* is evidently most nearly allied to "*Tagel*" of Adanson (*Solen Guinensis*, Gmelin), to which I have given the name of *Tagelus* in my list of genera, so long ago as 1848, when I placed *Novaculina* as a subdivision of that genus; and Mr. Benson's figure, now first published, justifies that position in all particulars, and is very different from the *Solecurtus* of De Blainville (1824), which has *S. strigillatus* for its type.

Since the above was in type, Mr. Benson has kindly sent to the British Museum a specimen of each of these genera. They confirm the opinions above stated. *Tanysiphon* is evidently very nearly allied to *Glauconome*, but is distinct in the teeth being more conical and less compressed, the hinder one shorter and less oblique, and especially in the cartilage and ligament being very short, and placed obliquely close behind the cardinal teeth; while in *Glauconome* the cartilage and ligament are elongate and parallel with the cardinal edge, which is swollen into a well-developed fulcrum.

XIV.—*Gleanings in British Conchology.*

By J. GWYN JEFFREYS, Esq., F.R.S.

[Continued from vol. i. p. 48.]

[With a Plate.]

SINCE the publication of my former paper on this subject, several additions to the lists, both of species and localities, have occurred to me; these I will now take this opportunity of recording. They have been chiefly derived from the northern and southern extremities of the British Isles; and I have to express my best thanks to my friends Mr. Barlee and Dr. Lukis in particular, as well as to Mr. M'Andrew, Mr. Waller, Dr. Battersby, the Rev.

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A. M. Norman, and Mr. Spence Bate, for their valuable co-operation.

Some conchologists entertain a doubt whether the Channel Isles can be properly considered part of Great Britain for natural-history purposes, because their geographical situation places them nearer to the French than our own coasts; but the Sarnic fauna and flora (although peculiar) have always been considered British by our chief naturalists; and our continental neighbours have never, I believe, appropriated or claimed them as their own. Although this part of our sea-coast had been for several years past diligently explored by Mr. Hanley, Mr. Metcalfe, Mr. Barlee, and several other collectors, many species new to Great Britain have now turned up; some of them (e. g. *Triton nodiferus* and *cutaceus*, *Cardium papillosum* and *Argiope decollata*) being not only of a conspicuous size, but including one of the largest known European shells. The zeal and intelligence of Dr. Lukis will doubtless increase our knowledge of the Testacea in this district; and it is to be hoped that he may be induced to publish a special account of that branch of the Sarnic fauna. I have never myself had the good fortune to visit the Channel Isles; but through his kindness I have had and examined a quantity of shell-sand which was dredged up, by his directions, at a considerable distance from land, and at a depth of from 15 to 20 fathoms, and I have been thus enabled to form some idea of the conchological wealth and variety which appear to abound in this part of our seas. The shells from this district are principally of a Mediterranean character.

Mr. Waller also kindly sent me some shell-sand which he has lately dredged up from the Turbot Bank off the coast of County Antrim, at a depth of about 25 fathoms; and although I have not yet had time to examine it carefully, the contents (so far as a superficial view enables me to judge) deserve, in my opinion, special notice. What have been hitherto regarded as northern and southern forms are here found to be closely associated together. *Buccinum Holböllii*, *Scalaria (?) Eschrichtii*, *Natica clausa*, *Margarita cinerea* and *Trophon scalariformis* (which are decidedly Arctic species), *Crania anomala*, *Trichotropis borealis* and *Puncturella Noachina* (according to the late Professor Edward Forbes, "Boreal" types), *Terebratula caput-serpentis*, *Lima subauriculata* and *Fissurella reticulata* ("Atlantic"), *Argiope cistellula*, *Trochus Montagui* and *Pecten tigrinus* ("British"), *Astarte sulcata*, *Buccinum undatum* and *Venus casina* ("Celtic"), *Artemis lincta*, *Corbula nucleus* and *Trochus cinerarius* ("European"), and *Rissoa striatula* ("Lusitanian"), all in the same fresh and apparently recent condition, are found to be collected in the same locality, as if on purpose to confound or perplex the theories of geographical

distributionists. As, however, few of these shells were taken in a living state, it may be said that some of them were fossil, or had been carried by submarine currents to the spot. Now, although no chemical or other test has yet been discovered for distinguishing what are called fossil from recent shells, whose cavities or tissue are not permeated by mineral matter, the general appearance of all the specimens in question, and their hyaline texture, instead of the dull aspect and opacity of fossil-shells from even the newest strata of the Tertiary system, sufficiently make out a *prima facie* case of their recent origin; while it is highly improbable that various currents would set in quite opposite directions for many hundred leagues, and bring shells from the very bottom of the sea to this particular locality. It is, on the contrary, as I submit, a fair inference, that all the Mollusca whose remains have been thus brought to light, lived and died within a few miles of the place of their ultimate sepulture. How far their continued submersion in the sea for many ages, beyond the reach of atmospheric influence, may have prevented any change in their composition, and given them a recent appearance, instead of that of true fossils, is another question, which I am not prepared to answer.

[Since the above was written, I have received from Mr. Waller a very interesting paper of his on the above subject, which has just been published in the 'Transactions of the Royal Dublin Society,' and to which I beg to refer my readers for an exposition of his views. I may observe, that the fragments of a shell which I at first supposed to belong to a *Turritella* allied to *T. polaris*, and which Mr. Waller has provisionally named "*Hibernica*," I have since ascertained to be the *Scalaria Eschrichti* of Holböll and *S. borealis* of Beck. The results of this dredging exploration are reserved for the next meeting of the British Association for the Advancement of Science, under whose auspices it was partly conducted; and I therefore abstain from making any further allusion to it.]

While mentioning shell-sand, it may not be amiss to remark that it ought to be carefully passed through sieves of various degrees of fineness before examining it; for otherwise the eye will be distracted by the unequal size of the objects submitted to it, and some of the smaller shells may be concealed from view by larger and coarser ones. If by chance this suggestion is adopted by French conchologists, I hope they will not be led by an accident of mistranslation into a similar error to that which I noticed in a recent number of the 'Journal de Conchyliologie,' in which I was said to recommend using the *dredge* to get up sea-weed from different depths of the sea, for the purpose of collecting minute shells!

With respect to the operations of my old friend and partner, Mr. Barlee, in the "ultima Thule," I regret to say that they have not this year been so successful as heretofore. With a view to greater results (the expenses being also much greater), we took into the firm Mr. Damon, the well-known and enterprising shell-dealer, who was to have the duplicates; but I fear his share of the spoil will much exceed ours. *Terebratula cranium*, *Cerithium metula*, *Mangelia nana*, *Aporrhais pes-carbonis*, *Trochus alabastrum*, and *Tellina balaustina* (all of them northern treasures) may be enumerated as the chief products of this expedition, so far as it has hitherto proceeded. The variable, and often tempestuous, state of the winds and sea, even during the height of summer, will always render the Shetlands an uncertain and unsatisfactory dredging-ground; although its high northern position, and the innumerable voes and fiords by which it is intersected on every side, afford unusual prospects of rarities, as well as shelter to the molluscous tribe. Mr. Barlee informs me that our dredger, Angus M'Nab, whom he took with him, has been most indefatigable, honest, and intelligent in performing his part of the work.

A frequent inspection of the cabinet of Mr. M'Andrew (who has been most liberal in the use of it) has enabled me to correct one or two mistakes which I had made in the identification of Mediterranean and British species, his collection of the former being perhaps unrivalled. It is impossible to define and distinguish with sufficient accuracy the shells of any isolated district without regard to those of other districts in the same geographical province; and my recent investigation of the Testacea of the Piedmontese coast satisfied me as to the importance, if not the necessity, of extending the area of observation for the above purpose. Mr. M'Andrew's collection of shells from the coasts of Upper Norway (which is also very rich) was likewise of great service to me; and it confirmed my former opinion, that, in general, the size of specimens increases in a ratio inverse to their northern, and converse to their southern, point of latitude, of which *Tellina balaustina*, *Cardium minimum* (*Sueicum*), *Rissoa pulcherrima*, *Trochus undulatus*, and *Arca raridentata* may be cited as examples. Colour appears to depend on different laws, and is generally more vivid in southern than in northern climes; for instance, *Cardium papillosum*, *Pecten furtivus*, and many others. In great depths it is indeed wanting, or nearly so, as may be seen by comparing specimens of *Venus ovata* and *Turritella communis* obtained from the coralline zone, and a depth of 100 fathoms.

I am indebted to the skilful and experienced pencil of my friend Mr. Alder for figures to illustrate this paper, as well as

for his assistance in determining many of the species now proposed to be added to the British fauna.

Acephala Lamellibranchiata.

Teredo Norvegica, *Forbes & Hanl. Brit. Moll.* vol. i. p. 66. Guernsey, in piles (*Dr. Lukis*).

Pholas parva, i. 111. Guernsey, with *P. dactylus*, in submarine wood and peat (*Dr. Lukis*).

P. candida, i. 117. Guernsey, with the last two (*Dr. Lukis*).

Saxicava arctica, i. 141. Guernsey, with *S. rugosa*; but I am not satisfied as to the distinctness of the two species.

S. fragilis (*Nyst*), *Wood's Crag Moll.* p. 288. tab. xxix. figs. a—e. *S. rugosa*, juv. ?, *B. M.* i. 149. pl. 6. f. 1—3, and iv. 248. In trawl-refuse from Plymouth; and I have it also from the Hebrides and Aberdeen. Mr. Searles Wood, who is now satisfied as to the identity of his fossils with the recent species, has mentioned that several dead valves were obtained from the beach on Stone Point, at Walton-on-the-Naze; and Mr. M'Andrew dredged it in Vigo Bay,—so that it has an extensive range. There can be no question of its being quite distinct from *S. rugosa*, if indeed it belongs to the same genus.

Panopaea Aldrovandi, i. 178. A pair of this magnificent shell was brought to me many years ago, as having been taken in a trawl-net off the Cornish coast; and I have no reason to doubt the possibility of its being a British shell, any more than the *Triton cutaceus* and *nodiferus*, which (as will be presently seen) are now satisfactorily proved to be inhabitants of our southern coast.

Neæra costellata, i. 199. Shetlands (*Mr. Barlee*).

Thracia villosiuscula, i. 224. Guernsey.

T. convexa, i. 29. Part of a valve in dredged sand from Skye.

Solecurtus candidus, i. 263. Herm and Guernsey, in sand, at half-tide mark (*Dr. Lukis*).

Psammobia vespertina, i. 271. Guernsey (*Dr. Lukis & J. G. J.*).

P. Ferroensis, i. 274. Guernsey (*Dr. Lukis & J. G. J.*).

Diodonta fragilis, i. 284. Guernsey. Only part of a valve, but sufficiently characteristic for distinction.

Tapes decussata, i. 379. Guernsey (*Dr. Lukis*).

T. aurea, i. 392. Guernsey (*Dr. Lukis*).

Cytherea chione, i. 396. Guernsey; rare (*Dr. Lukis*).

Cyprina Islandica, i. 441. Guernsey (*Dr. Lukis*).

Circe minima, i. 446. Plymouth.

Astarte arctica, i. 464. The single valve, which was dredged by Mr. M'Andrew in the outer haaf-grounds, Zetland, and recorded in the 'British Mollusca,' is evidently fossil; and Mr. M'Andrew agrees with me as to this. The late Professor Macgillivray's specimen was taken with valves of *Pecten Islandicus*, and has also the same Tertiary origin. My specimen, which was presented to me by the late Dr. Fleming, from St. Andrew's Bay, is in the same condition; and there is no satisfactory evidence of this species having been found on our coasts in a fresh or recent state,

Cardium aculeatum, ii. 4. Guernsey (Dr. Lukis).

C. rusticum, ii. 11. Guernsey (Dr. Lukis).

C. punctatum, Brocchi, Foss. Subapenn. ii. 666. tav. xvi. f. 11; Philippi, Test. Sic. ii. 38. *C. nodosum* (Turton), B. M. ii. 22. This species is not uncommon at Guernsey, and individuals are sometimes found there of a beautiful pink colour. Mr. M'Andrew has taken a variety of it in Vigo Bay. The punctures in the interstices of the ribs are more apparent towards the beaks, and may be easily observed under a moderate magnifying power. Philippi has, in his second volume, separated it from *C. papillosum*, and pointed out, with his usual discrimination, the differences which exist between the two species. I had also erroneously considered them identical in my paper on Piedmontese Testacea. Brocchi's name, being prior in point of date, must therefore be restored.

C. papillosum, Poli, Test. Sic. t. 16. f. 2-4; Phil. i. 51. This beautiful and very distinct species was first discovered in Guernsey by Dr. Lukis, and I have since detected it in shell-sand dredged off St. Martin's Port. It seems to be tolerably diffused on this part of our coast, though as yet rare. The largest specimen found, and for which I am indebted to the kindness of Dr. Lukis, measures upwards of half an inch in length and breadth. The one figured in Pl. V. fig. 1 a, b, is smaller, but of a milk-white colour. Other specimens are mottled with the same rosy hue that distinguishes those obtained from the Mediterranean.

C. fasciatum, ii. 25. Guernsey (Dr. Lukis & J. G. J.).

Lucina divaricata, ii. 53. Besides the locality mentioned for this rare shell by Messrs. Forbes and Hanley, where I obtained by dredging two single valves, I found another valve many years ago in shell-sand dredged from the Cornish coast for manure.

L. flexuosa, ii. 54. Plymouth and Guernsey.

Clausina Croulinensis, Jeffreys, Ann. N. H. xx. 19. *Lucina ferruginosa*, var., B. M. ii. 62. If such a thing as a species exists in nature, there can be, I think, no question that this is distinct from *C. ferruginosa*, both as regards form and texture and dentition. Figures of it are given in Pl. V. fig. 2 a-c. Mr. Barlee has lately found it in the Shetlands, together with *C. ferruginosa*.

With great deference to Mr. Searles Wood's opinion, I cannot agree with him in considering his *Cryptodon ferruginosum* specifically identical with the *Lucina ferruginosa* of Forbes and Hanley. His specimens (which I have examined carefully and compared with ours) appear to differ essentially in form, as well as in the hinge and mode of dentition; and I should be inclined to place his species generically with *L. flexuosa* instead of with *Clausina*.

Diplodonta rotundata, ii. 66. Guernsey (Dr. Lukis & J. G. J.).

Montacuta ferruginosa, ii. 72. Guernsey (Dr. Lukis).

M. substriata, ii. 77. Guernsey (Dr. Lukis). A more solid and opake variety, in which the radiating striae or ribs are obliterated, has been taken by Mr. Barlee, at a depth of 110 fathoms, in the Shetlands.

M. ? Donacina, var. *cylindrica*, Wood's Crag. Moll. part ii. p. 131.

I found a single valve of this remarkable shell by dredging at Falmouth in 1839; and it is (as Mr. Wood says) impossible to mistake it for any other species, or even satisfactorily to allocate it generically. In form it somewhat resembles a miniature *Zetatia*.

Turtonia minuta, ii. 81. In dredged sand from Guernsey I found a shell which apparently belongs to this species or to a variety of it. It is, however, of an oblong rather than an oval form, is more than double the size of ordinary specimens, and has dark streaks of purplish brown radiating from the hinge to the margin. The teeth also are conspicuous, and appear to agree with Lovén's description of northern specimens. It may be specifically different from *T. minuta*; but more specimens will probably be discovered, so as to clear up the doubt.

Lepton nitidum, var. *convexum*, ii. 102 and iv. 255 (*Kellia nitida*). Plymouth and Guernsey.

L. squamosum, ii. 98. Guernsey (Dr. Lukis & J. G. J.).

L. Clarkiae, iv. 255. Plymouth, Torbay, and Guernsey.

Cyclas caliculata, ii. 115. Guernsey (Dr. Lukis).

Pisidium pusillum, ii. 123. Guernsey and Jersey (Dr. Lukis).

M. Baudouin, in a recent and elaborate essay on the French *Pisidia*, unites *P. cinereum* of Alder and *P. pulchellum* of Jenyns as varieties of *P. Casertanum* (*Cardium Casertanum* of Poli); and he doubts the specific distinction of *P. Recluzianum* (Bourguignat), which is stated to have been found at Belfast, and which M. Moquin-Tandon regards as a variety of *P. Henslowianum*.

Modiola phaseolina, ii. 186. Guernsey, rather common (Dr. Lukis & J. G. J.). Falmouth (Mr. Webster).

Crenella rhombea, ii. 208. Not uncommon in the coralline zone, Guernsey (Dr. Lukis & J. G. J.); Torbay (Dr. Battersby & J. G. J.).

Nucula radiata, ii. 220. Guernsey, with *N. nucleus* (Dr. Lukis & J. G. J.).

Pectunculus Glycimeris, ii. 245. A curious monstrosity has been taken by Mr. Barlee in the Shetlands. The hinge-plate is flattened, and wants every vestige of the usual cardinal teeth; but, as a substitute, it has a rather strong lamina on each side locking into corresponding grooves in the opposite valve. This peculiarity would, in the opinion of some systematists, warrant the formation of a new genus. The specimen, which is young, is also distorted in form.

Pecten furtivus, (Lovén) Ind. Moll. Scand. p. 31. *P. striatus*, var., ii. 284. I found a single valve of this unquestionably distinct species in dredged sand from Guernsey; and Mr. M'Andrew has also taken it on the coast of Spain. It is intermediate between *P. striatus* and *P. tigrinus*, having the form of the first and sculpture of the last. Southern specimens are much larger than those hitherto found in the North.

Acephala Palliobranchiata, or *Brachiopoda*.

Terebratella (D'Orbigny; Megerle, King) *truncata*. *Terebratula truncata*, Lamarck, vi. 1. p. 247. *Anomia truncata*, Chemn. viii. t. 77. f. 701 a, b. *Orthis truncata*, Phil. ii. 69. Having examined Dr.

Turton's specimen in my cabinet, which he is said to have procured from Torbay, and which is referred to in the foot-note at p. 362. vol. ii. of the 'History of the British Mollusca,' I am enabled to state confidently that it belongs to the above species, and not to *Terebratula detruncata* or *decollata*, as therein supposed. M. Collard-Descherres records *Terebratula truncata* as having been taken on the coast of Finisterre (Journal de Conchyliologie, tome ii. p. 393), and there is no reason to doubt the possibility of its being a British species. It is not uncommon in the Mediterranean. Chemnitz cites the *Anomia truncata* of Müller's Prodromus to the 'Zoologia Danica' as a synonym, but I think hastily; for Müller separates, characteristically as well as generically, *Terebratula* from *Anomia*, and his diagnosis of *Anomia truncata* ("testa suborbiculata, obsolete striata, cardine truncato") may equally apply to a variety of *A. patelliformis*.

Argiope decollata. *Anomia decollata*, Chemn. viii. t. 78. f. 705. *A. detruncata*, Gmelin, 2347. *Orthis* (changed from *Terebratula*) *detruncata*, Phil. ii. 69. Of this fine and interesting species I found a few perfect specimens, of different ages, and two single valves in dredged stuff from Guernsey. The size of my largest specimen is nearly one-third of an inch square. These have not the normal form of the species, and resemble a horse's hoof in shape, being longitudinally oval, instead of transversely oblong (as in Mediterranean examples); and the ribs are much fainter and do not extend to the front margin. Specimens in Mr. M'Andrew's collection from Madeira (though smaller than ours) have the same form and sculpture. These may therefore belong to a distinct and undescribed species. A representation will be found at Pl. V. fig. 3 a-e. The specific name of *decollata*, given by Chemnitz, has priority over that of *detruncata*, which Philippi adopted from Gmelin, the latter author having erroneously cited Chemnitz as the authority for his name. The species was first indicated by Gualtier; but he did not designate it by any specific name, although his description is not bad compared with his drawing, which is abominable.

A. cistellula, ii. 361 (*Megathyris*) and iv. 257. Not uncommon in the coralline zone at Guernsey, Dr. Lukis having taken upwards of 200 specimens from a single stone. I erroneously referred this species in my paper on Piedmontese Testacea to the *Orthis Neapolitana* (*seminulum*, olim) of Philippi; but having since had the opportunity of examining a great number of specimens, I am satisfied that the two species are distinct. The *Orthis Neapolitana* differs from our species in being longitudinally instead of transversely oval (although individuals vary considerably in this respect), in the foramen being smaller, and in the hinge-plate being contracted, and not (as in *A. cistellula*) extending the whole breadth of the shell; in the papillæ which encircle the interior margin of each valve being much less numerous and more prominent; as well as in the internal rib of the under or flat valve being strongly serrated. It also attains to twice the size of *A. cistellula*. I have little doubt that Philippi's species will be found in the Channel Isles or on the south coast of England. Mr. Davidson (in his excellent monograph on

the British Tertiary Brachiopoda, p. 10) seems to question its being an *Argiope*.

A very minute Brachiopodous shell ($\frac{1}{25}$ th of an inch in length, and $\frac{1}{40}$ th in breadth) has been found by Mr. Norman in shell-sand from Plymouth, which he received from Mr. Webster; and it is so peculiar in form as to deserve special notice. It is egg-shaped and slightly compressed towards the sides and front margin, and is sub-opake and rather solid for its size. Foramen rather small. Auricles or lateral prolongations indistinct. The surface is closely punctured and quasi-tuberculated as in *A. cistellula*. It is of a horn-colour. Being so excessively small as to defy any attempt to examine the internal structure without danger of breaking or injuring the specimen, it is impossible to say whether it is an *Argiope*; but having carefully compared it with analogous examples of *A. cistellula*, which, as I before mentioned, vary greatly in form, I am inclined at present to consider it an extreme variety of that species. Nearly a similar variation of form, dependent on growth, occurs in specimens of *A. decollata*. The discovery of more and adult examples will probably clear up the doubt. By the kind permission of Mr. Norman and the assistance of my friend Mr. Alder (who concurs with me in the allocation of this specimen), I have given a representation of it at fig. 4 *a, b*, in the plate attached to this paper.

Pteropoda.

Spirialis Flemingii, ii. 384. Guernsey (*Edgar Macculloch, Esq.*), and in trawl-refuse from Plymouth.

S. Jeffreysii, ii. 386. The true locality for this species as British is Tenby; that given by Forbes and Hanley ("shores of the British Channel") not being quite correct. The mistake is probably owing to a misprint of the word "British" for "Bristol."

Gasteropoda Prosobranchiata.

Patella vulgata, ii. 421. The shell, in its very young state, has an excentric spire, which afterwards becomes absorbed, as in *Acmaea* and other genera. The importance of embryology in determining the laws of growth and classification is now fully admitted. With respect to the habits of the animal, Dr. Lukis informs me that in taking up the common Limpet, while in the act of crawling, he has noticed young ones attached to the grooves of the foot or sustentaculum; and he infers that the parent carries its offspring about with it for protection. I had heard of an oyster being "crossed in love," but I was not prepared for this wonderful instance of molluscan *στρογγύλη*.

Trochus millegranus, ii. 502, var. *conica*. Guernsey and Plymouth.

Margarita (Trochus) pusilla, ii. 584. Guernsey. Mr. M'Andrew has taken it in the Mediterranean.

M. exilis. *Trochus exilis*, Phil. ii. 156. t. xxv. f. 15. *Skenea Cutleriana*, iii. 164, and (*Trochus*) iv. 270. In dredged sand from

Skye and Guernsey, and Mr. M'Andrew has it from the Mediterranean. A specimen, larger than usual, confirms the idea I entertained from the first, that this is Philippi's species.

Paludina vivipara, iii. 11. A young specimen occurred to me in the Guernsey dredgings; but how it got there is a marvel. Dr. Lukis assures me that there is no river in any of the Channel Isles, nor indeed any piece of water in which such a shell is likely to exist; and he has never found a *Paludina*, after many a diligent search for freshwater shells in that district. The specimen above mentioned may possibly have been transported by some river from the opposite coast either of England or France; the specific gravity of fresh water being less than that of the sea, its motion might buoy up such trifling substances for a long distance.

[In a letter which I have received from Dr. Lukis since writing the above, he offers a more probable solution of the problem, in suggesting that the shell may have been brought in ballast; and he says that some years ago, certain individuals, who were more adventurous and speculating than wise, opened a vein of black oxide of manganese in the neighbourhood of the dredging-ground, conceiving it to be a vein of plumbago, and that vessels came, no doubt in ballast, to remove the supposed treasure, and possibly left the shell in question to puzzle future *speculators*. I may remark, in confirmation of this idea, that I found, with the *Paludina*, some *Foraminifera* (species of *Rotalina* and *Nummulina*) which are evidently fossil, and may have been also brought from Sheppey or the Isle of Wight.]

Lacuna crassior, iii. 67. In dredged sand from Guernsey.

Rissoa Beanii, iii. 84. With the last.

R. cimicoides, *Forbes*, *Ægean Invertebrata* in *Brit. Assoc. Rep.* for 1843, p. 189. *R. sculpta*, B. M. iii. 88 (not of Philippi). Guernsey, with *R. calathus*. A comparison of typical specimens of *R. cimicoides*, in Mr. M'Andrew's collection, with our shells and the author's description, induces me without any hesitation to refer the *R. sculpta* of the authors of the 'British Mollusca' (founded on my specimens) to the above species. Philippi's species is evidently different, the longitudinal ribs and cancellation being more remote, and the inner lip smooth, in his shell. On this last character he indeed lays particular stress in comparing it with other species; and it is very distinct in our shell.

R. punctura, iii. 89. Guernsey (Dr. Lukis & J. G. J.).

R. rufilabrum, iii. 106. In dredged sand from Guernsey.

R. inconspicua, iii. 113. With the last.

R. vitrea, iii. 125. Torbay and Plymouth.

R. proxima, iii. 127. With the last; thus affording a corroborative proof that the two species are distinct.

R. pulcherrima, iii. 129. Paignton, at the rocks of *Corallina officinalis*. This cannot easily be mistaken for any of the numerous varieties of *R. inconspicua* (which is also found in the same locality), being so very different in form and markings.

R. soluta, iii. 131. In dredged sand from Guernsey, not uncommon; and in trawl-refuse from Plymouth,

R. Alderi, n. s. Pl. V. fig. 5 *a-c*.

Testa ovato-conica, solidula, nitida, lutea, strigis transversis creberimis subflexuosis exilibus insculpta; anfractibus 5, convexis, sensim inerecentibus; sutura profunda; apertura subrotunda, superne acutangulata; labio fere continuo, columellæ adnato; umbilico parvo, angusto; long. $\frac{1}{2}$, lat. $\frac{1}{20}$ unc.

Only three specimens have occurred to me, in dredged sand from Skye, which was procured by Angus M'Nab, and in which I also found the two species of *Proteonina* described and figured by Prof. Williamson of Manchester in his elaborate and valuable monograph on the British Foraminifera. *R. Alderi* differs from *R. soluta* of the British Mollusca (with which it was found) in being more than twice the size, in the conical form of the spire, and in the peristome not being continuous.

R. ventrosa, var. *muriatica*, iii. 140. Guernsey, in abundance on *Ulva lactuca* (*Mr. Lukis, sen.*).

Jeffreysia diaphana, iii. 152. Paignton.

J. opalina, iii. 158. With the last.

Skenea nitidissima, iii. 158. With the last two.

Aporrhais pes-carbonis, iii. 186. Mr. Barlee says that the animal of this species differs from that of *A. pes-pelecani* (both of which he has examined and compared together) in the following particulars. The entire snout and tentacula of *A. pes-pelecani* are of a dull brick-colour, while the snout of *A. pes-carbonis* is bright scarlet, with a snow-white opaque line running all down the centre, and terminating thus \perp —the tentacula being of the same colour as the rest of the animal (viz. watery-white), with an opaque snow-white line down the centre to the very tip of each. The snout of this last species is also flatter and narrower than that of *A. pes-pelecani*; and its foot is long, narrow, and almost pointed when extended on the march.

Cerithium reticulatum, iii. 192. var. *sine varicibus et spira breviore*. From deep water, Guernsey; the ordinary form being littoral.

Cerithium Metaxa. *Murex Metaxa*, Delle Chiaje, Mem. (1823) vol. iii, p. 222. t. 49. f. 29-31. *Cer. Metaxa* (?), Wood's Crag Moll. part 1. p. 71. *Cer. angustissimum*, Forbes, Rep. on Æg. Inv. 190. Specimens, though rare, and in a more or less imperfect state, have been found at Guernsey by Mr. Norman, Mr. Barlee, and myself. Mr. M'Andrew has taken it by dredging off Teneriffe, and Pantellaria in Sicily; and I also obtained it by the same mode in the Gulf of Spezzia. Having examined Mr. Searles Wood's specimens of what he doubtfully considered Delle Chiaje's species, I am satisfied as to the specific identity of the fossil and recent shells. Delle Chiaje notices the *four* transverse ribs, which is one of the characteristics of this species. It is the *Cerithium creperum* of Mr. Wood's earlier Catalogue of Tertiary Fossils. The accompanying representation (Pl. V. fig. 6 *a, b*) is taken from a Piedmontese specimen, which is much more perfect than any other that I have seen.

Scalaria Turtonis, iii. 204. Guernsey (*Dr. Lukis*).

S. communis, iii. 206. In dredged sand from Guernsey.

Aclis ascaris, iii. 219. Guernsey (*Dr. Lukis & J. G. J.*). Plymouth.

A. supranitida, iii. 220. With the last. Guernsey specimens vary as to the number and disposition of the transverse striae, which are sometimes wanting altogether, and at others are only present on the upper whorls, although their total or partial absence has evidently not been caused by friction.

A. (?) unica, iii. 222. Guernsey (*Dr. Lukis & Mr. Barlee*).

Styliifer Turtoni, iii. 226. I found a specimen, with the (dead) animal in it, among some trawl-refuse from Plymouth, which contained some of the *Echinus sphæra*; and I am informed that several specimens have been taken in the same locality.

Eulima stenostoma, n. s. Pl. V. fig. 7 a, b. *E. subulata*, var. ? iii. 236.

Testa acuminata, *hyalina*, *alba*, *fragilissima*, *glabra*; *anfractibus* 9, *teretibus*, *gradatim* *increcentibus*, *ultimo* *reliquos* *æquante*, *superioribus* *duobus* *obtusis*, *fascia* *pellucida* *ultimum* *prope* *medium*, *superiores* *juxta* *suturam*, *cingente*; *sutura* *vix* *distincta*; *apertura* *pyriformi*, *contracta*, *subtus* *effusa*, *superne* *acutangulata*; *peristome* *in* *columellam* *subreflexo*; *columella* *arcuata*; *long.* $\frac{1}{3}$, *lat.* $\frac{1}{2}$ *unc.*

Mr. M'Andrew having obligingly presented me with one of his Zetland specimens, I am enabled to offer the above description. He has also taken specimens on the coast of Norway, which confirm the idea of this proving to be a distinct species, as was surmised by the authors of the 'British Mollusca.' It has somewhat the appearance of a large *Achatina acicula*.

Chemnitzia simillima. *Turbo simillimus*, Mont. Test. Brit. Suppl. p. 136, and Laskey, Mem. Wern. Soc. 406. t. viii. f. 15. *Ch. pusilla*, Phil. ii. 224. t. xxviii. f. 21. *Odostomia lactea* β , Jeffr. Ann. N. H. vol. ii. n. s. p. 348. *Ch. elegantissima*, var., B. M. iii. 243. Torbay and Guernsey. Specimens from the last-named locality are sometimes toothed, as in *Odostomia* proper. It is very distinct conchologically from any of the varieties of *C. elegantissima*, and also malacologically, as Mr. Clark has observed. Montagu's description of *Turbo simillimus*, that it resembles *elegantissimus*, but is less slender, and has fewer and more distant ribs, that are not slanting or oblique, but straight and more arched, as well as larger than the interstices, seems exactly to distinguish the two species.

C. rufa, iii. 247 and iv. 276. Plymouth.

C. indistincta, iii. 255. In dredged sand from Guernsey.

C. clathrata, iii. 258. Mr. M'Andrew obtained a single specimen at Orotava. It has a closer affinity to *Odostomia interstincta* than to *O. indistincta*, but is evidently distinct from any of the varieties of either of those species.

Odostomia conoidea, iii. 260. Plymouth.

O. conspicua, iii. 263. I found a couple of fresh specimens in dredged sand from Guernsey; and Mr. Barlee procured another from the same source. It is by far the largest of our *Odostomiae*.

O. acuta, iii. 269. Mr. M'Andrew has taken this species in Norway with *O. insculpta*.

O. plicata, iii. 271. Guernsey.

O. Eulimoides, iii. 273. A comparison of fresh specimens just received from Mr. Barlee, of what I considered at first a distinct species, and named *O. notata*, has satisfied me that the latter is only a variety of this Protean species.

O. dubia, iii. 276. Guernsey.

O. alba, iii. 278, var. *gracilior et scalariformis*. Guernsey, Skye, and Zetland (Mr. Barlee & J. G. J.).

O. cylindrica, iii. 287. Torbay.

O. insculpta, iii. 289. Guernsey.

O. Warrenii, iii. 292. With the last.

O. truncatula, iii. 294. Adult specimens have a prominent and sharp tooth on the columella; but it is scarcely visible from the outside of the aperture.

O. decussata, iii. 303. With the last.

Eulimella Scillæ, iii. 309. Torbay (Dr. Battersby).

E. acicula, iii. 311. Guernsey (Dr. Lukis & J. G. J.).

E. affinis, iii. 313. Torbay (Dr. Battersby). Mr. M'Andrew has taken it in Norway with *E. acicula*.

Otina otis, iii. 321. var. *alba*. Guernsey (Dr. Lukis). Dr. Gray has very properly placed this genus in the family of *Auriculadæ*, to which it has conchological as well as malacological relations.

Cerithiopsis tubercularis, iii. 365, (*tuberculare*) var. *alba*. Plymouth (Mr. Barlee).

C. Clarkii, iii. 368. Another (being the second) specimen of this remarkable shell has occurred to me in dredged sand from Guernsey with *C. tubercularis*, which is not uncommon there; and it confirms the suggestion of the authors of the 'British Mollusca,' that it might prove to be a distinct species. Besides having only two rows of tubercles, the volutions are scalariform, and the suture is much deeper than in *C. tubercularis*.

C. pulchella, n. s. Pl. V. fig. 8 *a-c*.

Testa cylindrica, solidula, rufescente, costis longitudinalibus 18-20, transversis 4, cancellata, quarum 2 mediæ longinque prominent et infima carinam simulat, ad juncturam tuberculos efformantibus; anfractibus 7, convexis, ultimo reliquos subæquante; sutura profunda; apertura ovata; canali brevissimo; operculo membranaceo; long. $\frac{1}{10}$, lat. $\frac{1}{25}$ unc.

Falmouth, Plymouth, and Guernsey; but rare. Although the *C. tubercularis* is very variable in size, this species has a peculiar aspect, which is unmistakeable for that of any variety of the last-named species. Specimens of that species, of the same size as *C. pulchella*, have no less than twelve volutions; and the cancellations are invariably closer, and the transverse rows of tubercles equally prominent.

Murex rudis. *Fusus rudis*, Phil. ii. 180. t. xxv. f. 30. A single

specimen of this very distinct species has been in my cabinet for the last twenty years, and was found at Tenby by my late friend, Mrs. Richard Smith. Mr. Hanley considered it to be the young of *Fusus rostratus*; but, as Philippi justly remarks, his *F. rufus* differs from that species in its much less slender form and far shorter spire. Its nearest congener is *Murex corallinus*.

Buccinum Humphreysianum, iii. 410. Mr. Barlee says that the tentacula of the animal, instead of being flat and long (as in *B. undatum*), are peculiarly round and obtuse.

Fusus, iii. 433. pl. ciii. f. 4, 5. The fragment of a *Fusus*, described and figured as above, and which I examined in the cabinet of Mr. M'Andrew, clearly belongs to the variety *carinatus* of *F. antiquus*; and Mr. M'Andrew is of the same opinion.

Trophon scalariformis. *Fusus scalariformis*, Gould, Inv. Mass. p. 288. f. 203. *Trophon clathratus*, var. ?, B. M. iii. 438 (foot-note). The large fragment mentioned by Forbes and Hanley (and which was presented to me by the late Professor Macgillivray) has every appearance of being recent, and it still contains the remains of a hermit-crab. In dredged sand from Belfast Bay I found a perfect, though younger specimen, with *T. clathratus*, which is common there. The two species are, I think, distinct.

Triton cutaceus, iii. 446. Dr. Turton's collection, as well as the British Museum, contains specimens (though in the latter they are in a worn and imperfect state) from Padstow and Guernsey; and Mr. Lukis, sen. and Mr. Macculloch have found several from time to time in the Channel Isles. But all doubt of the indigenousness of this species may, I think, be considered as set at rest by mentioning that Dr. Lukis and Mr. Barlee dredged, last autumn, off the Guernsey coast, a half-grown and *living* individual. This I have seen, with the operculum preserved; and I am quite satisfied (as a lawyer!) with the proof of its being a British shell. I noticed specimens in the collection of M. d'Orbigny (père) at La Rochelle, in 1830, from the Gulf of Gascony; and it is rather a common Mediterranean species.

T. nodiferus. *T. nodiferum*, Lam. vii. 179. Three specimens of this truly magnificent shell have been taken in the Channel Isles at intervals, from 1825 to 1847; and two of them are now in the celebrated collection of Guernsey shells formed by Mr. Lukis, sen. I give in his own words the following account of these captures:—

“Three specimens have been dredged off the shores of Guernsey. In the year 1825, August 25th, the largest was brought to me by one of our island fishermen, named Charles Ozanne, of Paradis, in the Vale parish. He had a few days previously dredged it alive, and, in order to extract the fish, had boiled the shell. Some years after, a second was dredged by another fisherman, and was also alive. This was obtained in a living state by the late Admiral Sir Thomas Mansell. In the year 1847, a third specimen was brought to me alive, and I kept it in sea-water for a fortnight. It was very active, and repeatedly was found to have crawled out of the bucket on the floor.”

The largest specimen now measures nearly 9 inches in length,

although the tip has been broken since it was taken. This specimen is partly incrusted with *Lepralia coccinea*, which, besides the northern habitat, first recorded by Müller in his 'Zoologia Danica,' is only found, according to Busk, on the coasts of Great Britain and Ireland. Through the kindness of Mr. Lukis, I have examined all the three specimens; and he has since most obligingly presented me with one of them. Mr. Hanley, to whom I lately mentioned this discovery, thought that the fisherman whom he had employed in dredging (Jean Tussaud) might have palmed the shells as native on Mr. Lukis, and that the specimens came from the coast of Spain; but this appears to be a mistake. There is therefore, I think, no reasonable doubt as to the admission of this interesting species into the list of British Mollusca. It has been found by M. Martin on the coast of Provence, and is not uncommon in the Mediterranean.

Mangelia purpurea, var. *Philberti*, iii. 460. In dredged sand from Guernsey.

M. cancellata. *Fusus cancellatus*, J. Sowerby, Min. Conch. t. 525. f. 2. *Clavatula cancellata*, Wood's Crag. Moll. part 1. p. 61. pl. 7. f. 9. *Fusus asperrimus*, Brown, Ill. Br. Conch. p. 8. pl. vi. f. 2. *M. purpurea*, var., B. M. iii. 467. With the last. This beautiful species is quite distinct from any of the varieties of *M. purpurea*, and approaches nearer in the mode of cancellation to the *Pleurotoma reticulatum* of Bronn and Philippi. One of Mr. Barlee's specimens from the Shetlands measures $\frac{5}{8}$ ths of an inch in length. The fossil shells are specifically identical with ours.

M. scabra. *Pleurotoma scabrum*, Jeffr. in Ann. N. H. vol. xix. p. 311. *M. linearis*, var., B. M. iii. 470. Guernsey and Plymouth, with *M. linearis*, which is certainly a different species. Mr. M'Andrew has taken both in the Mediterranean and Norway. I have added a representation of *M. scabra* at Pl. V. fig. 9 a-c. What Forbes and Hanley called the "purple-tipped" variety is this species in a worn and scarcely distinguishable state.

Gasteropoda Opisthobranchiata.

Ovula patula, iii. 498. Guernsey (Dr. Lukis & J. G. J.). Mr. Horace Marryat informs me that he took several of these beautiful creatures alive, at a very low tide, off Alcyonia and Sponges from the roof of the famous Gouliot cave in Sark,—the absence of light probably compensating for depth of water, as this species usually inhabits the coralline zone.

Amphisphyra hyalina, iii. 521. Guernsey (Dr. Lukis & J. G. J.).

Bulla dilatata. *Haminæa dilatata*, Leach, Brit. Moll. p. 43. I have a specimen of this very distinct species from the collection of Mr. J. D. Humphreys mixed with *B. hydatis* in a tray labelled "Cork Harbour;" and I found a couple of specimens in 1830 on the Ile de Rhè in the Gulf of Gascony. Mr. M'Andrew has also taken it off the Grand Canary.

Scaphander lignarius, iii. 536, var. *alba*. Guernsey (Dr. Lukis).

Philine punctata, iii. 547. In dredged sand from Guernsey.

Gasteropoda Pulmonifera.

Helix aperta, iv. 43. Dr. Lukis thinks the specimen recorded as having been found in Guernsey by the late Professor Forbes was accidentally imported; and he adds that he has searched for the species in vain. It is rather a common article of food in the south of France and in Italy, and makes a dainty dish for snail-eaters.

H. aspersa, iv. 441. Mr. Barlee states, in answer to my inquiry as to the existence of this species in the Shetlands, that he has not been able to find it there. This common pest of our gardens does not appear to be known in the north of Europe or in Germany.

H. Pisana, iv. 561. On the western and southern shores of Jersey (Dr. Lukis).

H. ericetorum, iv. 61. Dr. Lukis says this species has been taken in Jersey, but is not now to be found there.

H. globularis, Jeffr. Linn. Trans. vol. xvi. p. 507. *H. sericea*, B. M. iv. 71 (not of *Draparnaud*). Guernsey (Dr. Lukis).

H. umbilicata, iv. 81. I found a specimen in trawled stuff from Plymouth, which had been taken at a distance of several miles from the shore.

Pupa alpestris. *Vertigo alpestris*, Alder, Trans. Nat. Hist. Soc. North. vol. ii. p. 340. *Pupa Shuttleworthiana*, Charpentier in Zeitschr. für Malak. for 1847, p. 148. *P. pygmaea*, var., B. M. iv. 106. Mr. Norman informs me that this species has been lately taken, rather abundantly, by Miss Sarah Bolton in the neighbourhood of Ambleside, on slate; and he adds that the recent notices of its rediscovery in the south of England and the neighbourhood of Dublin (as respectively recorded in the 'Zoologist' for 1850, vol. viii. p. 2743, and the Nat. Hist. Rev. vol. i. p. 94) are erroneous,—Mr. Bridgman's specimens from Norwich (judging from one which is in the British Museum, labelled "*Vertigo alpestris*") belonging to *P. pygmaea* (which I can confirm), and an example of the Dublin shell sent to Mr. Norman by Mr. Hogan as "*Pupa alpestris*," being quite a different species. I found specimens of *P. alpestris* at Zermatt and in the valley of the Dranse, in 1855, and they were named by the late M. Charpentier "*Pupa Shuttleworthiana*." Mr. Alder's name has, however, the precedence of publication. Specimens which I have received from Mr. Norman agree with those I found in Switzerland, as well as with the description of Mr. Alder, who has recognized them as his species. It is unquestionably distinct from *P. pygmaea* or any of its varieties.

Planorbis lacustris, iv. 162. Guernsey (Dr. Lukis).

Limneus acutus, Jeffr. Linn. Trans. xvi. 373. *L. auricularius*, var., B. M. iv. 170. Neighbourhood of Oban (*Capt. Bedford*); Bloomfield, Kent. Although all the species of *Limneus* are especially subject to variation of form, I much doubt if this is not distinct from *L. auricularius*. It is certainly not an "immature variety" of the last-named species, as stated by Forbes and Hanley, for I have found specimens of all ages agreeing in a common character.

L. glaber, iv. 178. Guernsey (Dr. Lukis).

